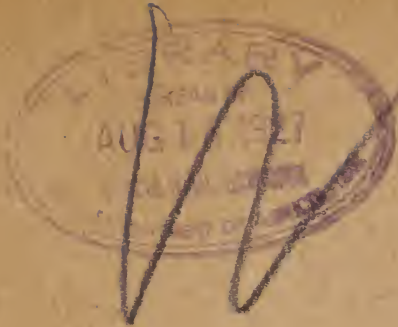


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**United States Department of Agriculture**

**SERVICE AND REGULATORY ANNOUNCEMENTS NO. 106**

**(AGRICULTURAL ECONOMICS)**

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**OFFICIAL STANDARDS OF THE UNITED STATES  
FOR THE INSPECTION AND CERTIFICA-  
TION OF HAY**

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**APPROVED APRIL 26, 1927**

**ISSUED AUGUST, 1927**

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# United States Department of Agriculture

SERVICE AND REGULATORY ANNOUNCEMENTS NO. 106

(Agricultural Economics)

## OFFICIAL STANDARDS OF THE UNITED STATES FOR THE INSPECTION AND CERTIFICATION OF HAY

By virtue of the authority vested in the Secretary of Agriculture by the act of Congress entitled "An act making appropriations for the Department of Agriculture for the fiscal year ending June 30, 1928, and for other purposes," approved January 18, 1927 (Public No. 552, 69th Cong.), I, W. M. Jardine, Secretary of Agriculture, do hereby fix, establish, and promulgate the following standards of quality and condition for timothy and clover hay, alfalfa and alfalfa mixed hay, prairie hay, Johnson and Johnson mixed hay, grass hay, and mixed hay, which shall become the official standards of the United States for the inspection and certification of such hays on the 1st day of July, 1927, and be in force and effect as long as Congress shall provide the necessary authority therefor, unless amended or superseded by standards hereafter prescribed and promulgated under such authority. These standards are amendatory of, and therefore shall supersede, the standards for timothy, clover and grass hay, alfalfa and alfalfa mixed hay, Johnson and Johnson mixed hay, prairie hay, and mixed hay, issued on August 27, 1925.

In testimony whereof I have hereunto set my hand and caused the official seal of the Department of Agriculture to be affixed, in the city of Washington, this 26th day of April, 1927.



*W M Jardine*  
Secretary.

### TIMOTHY AND CLOVER HAY

(Group I)

#### Definitions

For the purposes of the United States standards for timothy and clover hay:

Hay shall be the cured, unthreshed herbage which meets the requirements of the various classes in Group I, which has recognized feeding value, which is not coarse and woody, and which does not contain more than 35 per cent of foreign material.

Timothy may include not to exceed 10 per cent (of the total hay) of other grasses, except in the classes timothy light grass mixed and timothy heavy grass mixed, where the percentage of other grasses is specifically stated.

Clover shall be red clover, alsike clover, and/or white clover, and may include not to exceed 10 per cent (of the total hay) of alfalfa, vetches, and other legumes.

Grasses shall be redbtop, orchard grass, Kentucky bluegrass, Canada bluegrass, meadow fescue, awnless brome grass, quack grass, early cut pigeon grass (sometimes called foxtail or wild millet), and such other cultivated and wild grasses, sedges, and rushes as occur in timothy and clover meadows, and may include not to exceed 10 per cent (of the total hay) of early-cut grain hay.

Alfalfa may include not to exceed 10 per cent (of the total hay) of clover, vetches, and other legumes.

Foreign material shall be weeds, matured pigeon grass (sometimes called foxtail or wild millet), wire grasses (*Aristida* spp.), and such sedges, rushes, and other plants as are coarse and woody or otherwise not suitable for feeding purposes; also cornstalks, grain straw, stubble, chaff, and other objectionable matter which occurs naturally in hay.

Injurious foreign material shall be sand burrs, poisonous plants, harsh bearded grasses, such as matured squirrel tail grass (*Hordeum jubatum*), matured wild barley (*H. murinum*), and matured little barley (*H. pusillum*) and other matter which is injurious when fed to livestock.

*Green color.*—The term “per cent green” employed in these standards represents the amount of green color (green appearance) in field-cured hay computed as a percentage of the 100 per cent green color of hay produced so as to have received no discoloration from maturity, sun bleach, dew, rain, or other damage.

*Percentages.*—The standards for mixture percentages and foreign material are based upon percentages by weight of the total hay. The standard for coarse hay is based upon percentage by count of the clover plants. Measurements to determine diameters are made approximately 2 inches from the cut ends of the stalks. The standards for color are based upon color determinations ascertained by the method prescribed by the United States Department of Agriculture, which determinations are expressed in popular terms as “per cent green.”

### GROUP I.—*Timothy and clover hay*

Class requirements		Grade requirements <sup>1</sup>		
Class	Mixture percentages	U. S. grade No.	Per cent green color	Maximum per cent foreign material
Timothy-----	{ Timothy with not over 10 per cent clover.	{ <sup>1</sup> 1 50 or more..... 2 30 or more..... 3 Less than 30 <sup>3</sup> .....		10 15 20
Timothy light clover mixed---	{ A mixture of timothy and clover with over 10 per cent but not over 30 per cent clover.	{ <sup>1</sup> 1 50 or more..... 2 30 or more..... 3 Less than 30 <sup>3</sup> .....		10 15 20
Timothy medium clover mixed.	{ A mixture of timothy and clover with over 30 per cent but not over 50 per cent clover.	{ <sup>1</sup> 1 50 or more..... 2 30 or more..... 3 Less than 30 <sup>3</sup> .....		10 15 20
Timothy light grass mixed---	{ A mixture of timothy and other grasses with over 10 per cent but not over 30 per cent other grasses and not over 10 per cent clover.	{ <sup>1</sup> 1 50 or more..... 2 30 or more..... 3 Less than 30 <sup>3</sup> .....		10 15 20
Timothy heavy grass mixed---	{ A mixture of timothy and other grasses with over 30 per cent but not over 60 per cent other grasses and not over 10 per cent clover.	{ <sup>1</sup> 1 50 or more..... 2 30 or more..... 3 Less than 30 <sup>3</sup> .....		10 15 20
Timothy light alfalfa mixed---	{ A mixture of timothy and alfalfa with over 10 per cent but not over 30 per cent alfalfa.	{ <sup>1</sup> 1 50 or more..... 2 30 or more..... 3 Less than 30 <sup>3</sup> .....		10 15 20
Clover-----	{ Clover with not over 20 per cent timothy and/or other grasses.	{ 1 50 or more..... 2 30 or more..... 3 Less than 30 <sup>3</sup> .....		10 15 20
Clover light timothy mixed---	{ A mixture of clover and timothy with over 50 per cent clover and over 20 per cent timothy.	{ 1 50 or more..... 2 30 or more..... 3 Less than 30 <sup>3</sup> .....		10 15 20
All classes-----		Sample grade.	Hay of the above classes which contains more than 20 per cent foreign material, or which contains more than a trace of injurious foreign material, or which has any objectionable odor, or which is heating, hot, wet, moldy, musty, caked, badly stained, badly weathered, badly overripe, or otherwise of distinctly low quality.	

<sup>1</sup> Hay that is stained shall not be graded higher than No. 3.

<sup>2</sup> Timothy in this grade shall not have seeds matured beyond the early dough stage.

<sup>3</sup> Does not apply to hay that is graded No. 3 on account of foreign material.



## Special Grades to Supplement Numerical Grades in Group I

*Grades for extra green hay.*—Hay of the grades 1 and 2 of any of the classes in Group I, which has 65 per cent or more green color, shall have the words "Extra Green" included in and made a part of the grade designation, as: "U. S. No. 1 Extra Green Timothy," "U. S. No. 1 Extra Green Timothy Light Clover Mixed," "U. S. No. 2 Extra Green Clover (Account foreign material)."

*Grades for coarse hay.*—Hay of any numerical grade of the classes Clover and Clover Light Timothy Mixed in Group I, in which the clover is stemmy and more than 40 per cent of the clover stalks have diameters equal to and greater than the diameter of No. 10 steel wire (approximately thirteen one-hundredths of an inch) by steel wire gauge standards, shall have the word "Coarse" included in and made a part of the grade designation, as: "U. S. No. 2 Coarse Clover," "U. S. No. 3 Coarse Clover Light Timothy Mixed."

## ALFALFA AND ALFALFA MIXED HAY

(Group II)

### Definitions

For the purposes of the United States standards for alfalfa and alfalfa mixed hay:

Hay shall be the cured, unthreshed herbage which meets the requirements of the various classes in Group II, which has recognized feeding value, which is not coarse and woody, and which does not contain more than 35 per cent of foreign material.

Alfalfa may include not to exceed 10 per cent (of the total hay) of clover, vetches, and other legumes. Alfalfa, however, shall not have a percentage allowance of clover in the class Alfalfa Clover Mixed because in this class the percentage of clover is specifically stated.

Grasses shall be reedtop, orchard grass, Kentucky bluegrass, Canada bluegrass, crabgrass, quack grass, Paspalum, Bermuda grass, wheatgrasses, early cut wild rye, early cut pigeon grass (some times called foxtail or wild millet), early cut wild brome grasses, such as cheat and such other cultivated and wild grasses, sedges, and rushes as occur in alfalfa meadows, and may include not to exceed 10 per cent (of the total hay) of timothy, Johnson grass, or early cut grain hay, singly or in combination.

Timothy may include not to exceed 10 per cent (of the total hay) of other grasses.

Clover shall be red clover, alsike clover, and/or white clover.

Johnson grass may include not to exceed 10 per cent (of the total hay) of other grasses.

Grain hay shall be early cut hay of the grains, oats, barley, wheat, rye, and wild oats, singly or in combination, and may include not to exceed 10 per cent (of the total hay) of other grasses.

Foreign material shall be weeds, matured wild brome grasses, such as cheat, matured pigeon grass (sometimes called foxtail or wild millet), wire grasses (*Aristida* spp.) and such sedges, rushes, and other plants as are coarse and woody or otherwise not suitable for feeding purposes; also cornstalks, grain straw, stubble, chaff, and other objectionable matter which occurs naturally in hay.

Injurious foreign material shall be sand burs, poisonous plants, hard bearded grasses, such as matured squirrel-tail grass (*Hordeum jubatum*), matured wild barley (*H. murinum*), and matured little barley (*H. pusillum*), and other matter which is injurious when fed to livestock.

*Green color.*—The term "per cent green" employed in these standards represents the amount of green color (green appearance) in field-cured hay computed as a percentage of the 100 per cent green color of hay produced so as to have received no discoloration from maturity, sun bleach, dew, rain, or other damage.

**NOTE.**—Field-cured alfalfa hay which, on casual examination, appears to be of uniform green color, nearly always contains slight discolorations which materially lower the amount of green color from the perfect color standard. Thus the 60 per cent green color standard for No. 1 alfalfa represents an amount of color that is relatively high for field-cured hay.

*Percentages.*—The standards for mixture percentages and foreign material are based upon percentages by weight of the total hay. The standards for leafiness are based upon percentages by weight of the alfalfa. The standard for coarse hay is based upon percentage by count of the alfalfa plants. Measurements to determine diameters are made approximately 2 inches from the cut ends of the stalks. The standards for color are based upon color determinations ascertained by the method prescribed by the United States Department of Agriculture, which determinations are expressed in popular terms as "per cent green."

GROUP II.—*Alfalfa and alfalfa mixed hay*

Class requirements		Grade requirements			
Class	Mixture percentages	U. S. grade No.	Leafiness of alfalfa (per cent leaves)	Per cent green color	Maximum per cent foreign material
Alfalfa-----	{ Alfalfa with not over 5 per cent grasses.	1	40 or more-----	60 or more-----	5
		2	25 or more-----	35 or more-----	10
		3	Less than 25 <sup>1</sup> -----	Less than 35 <sup>1</sup> -----	15
Alfalfa light grass mixed.	{ A mixture of alfalfa and grasses with over 5 per cent but not over 20 per cent grasses.	1	40 or more-----	60 or more-----	5
		2	25 or more-----	35 or more-----	10
		3	Less than 25 <sup>1</sup> -----	Less than 35 <sup>1</sup> -----	15
Alfalfa heavy grass mixed.	{ A mixture of alfalfa and grasses with over 20 per cent but not over 60 per cent grasses.	1	-----	60 or more-----	5
		2	-----	35 or more-----	10
		3	-----	Less than 35 <sup>1</sup> -----	15
Alfalfa light timothy mixed.	{ A mixture of alfalfa and timothy with over 5 per cent but not over 30 per cent timothy.	1	40 or more-----	60 or more-----	5
		2	25 or more-----	35 or more-----	10
		3	Less than 25 <sup>1</sup> -----	Less than 35 <sup>1</sup> -----	15
Alfalfa heavy timothy mixed.	{ A mixture of alfalfa and timothy with over 30 per cent alfalfa and over 30 per cent timothy.	1	-----	60 or more-----	5
		2	-----	35 or more-----	10
		3	-----	Less than 35 <sup>1</sup> -----	15
Alfalfa clover mixed---	{ A mixture of alfalfa and clover with over 10 per cent but not over 50 per cent clover and not over 10 per cent grasses.	1	40 or more-----	60 or more-----	5
		2	25 or more-----	35 or more-----	10
		3	Less than 25 <sup>1</sup> -----	Less than 35 <sup>1</sup> -----	15
Alfalfa light Johnson mixed.	{ A mixture of alfalfa and Johnson grass with over 5 per cent but not over 30 per cent of Johnson grass.	1	40 or more-----	60 or more-----	5
		2	25 or more-----	35 or more-----	10
		3	Less than 25 <sup>1</sup> -----	Less than 35 <sup>1</sup> -----	15
Alfalfa heavy Johnson mixed.	{ A mixture of alfalfa and Johnson grass with over 30 per cent alfalfa and over 30 per cent Johnson grass.	1	-----	60 or more-----	5
		2	-----	35 or more-----	10
		3	-----	Less than 35 <sup>1</sup> -----	15
Alfalfa light grain mixed.	{ A mixture of alfalfa and grain hay with over 5 per cent but not over 20 per cent grain hay.	1	40 or more-----	60 or more-----	5
		2	25 or more-----	35 or more-----	10
		3	Less than 25 <sup>1</sup> -----	Less than 35 <sup>1</sup> -----	15
Alfalfa heavy grain mixed.	{ A mixture of alfalfa and grain hay with over 20 per cent of grain hay and over 40 per cent of alfalfa.	1	-----	60 or more-----	5
		2	-----	35 or more-----	10
		3	-----	Less than 35 <sup>1</sup> -----	15
All classes-----		Sample grade.	Hay of the above classes which contains more than 15 per cent foreign material, or which contains more than a trace of injurious foreign material, or which has any objectionable odor, or which is heating, hot, wet, moldy, musty, caked, badly weathered, badly over-ripe, or otherwise of distinctly low quality.		

<sup>1</sup> Does not apply to hay graded No. 3 on account of any other factor.

## Special Grades to Supplement Numerical Grades in Group II

*Grades for extra leafy hay.*—Hay of any numerical grade of the classes alfalfa, alfalfa light grass mixed, alfalfa light timothy mixed, alfalfa clover mixed, alfalfa light Johnson mixed, and alfalfa light grain mixed in Group II, in which the leafiness of the alfalfa is 50 per cent or more with most of the leaves clinging, and which does not contain more than 10 per cent foreign material, shall have the words "extra leafy" included in and made a part of the grade designation, as "U. S. No. 1 extra leafy alfalfa," "U. S. No. 2 extra leafy alfalfa light grass mixed."

*Grades for leafy hay.*—Hay of the grades 2 and 3 of the classes alfalfa, alfalfa light grass mixed, alfalfa light timothy mixed, alfalfa clover mixed, alfalfa light Johnson mixed, and alfalfa light grain mixed in Group II, which has less than 60 per cent green color, in which the leafiness of the alfalfa is 40 per cent or more, and which does not contain more than 10 per cent foreign material, shall have the word "leafy" included in and made a part of the grade designation, as: "U. S. No. 2 leafy alfalfa," "U. S. No. 3 leafy alfalfa."



*Grades for extra green hay.*—Hay of any numerical grade of any of the classes in Group II which has 75 per cent or more green color, and which does not contain more than 10 per cent foreign material, shall have the words "extra green" included in and made a part of the grade designation, as "U. S. No. 1 extra green alfalfa."

*Grades for green hay.*—Hay of the grades 2 and 3 of the classes alfalfa, alfalfa light grass mixed, alfalfa light timothy mixed, alfalfa clover mixed, alfalfa light Johnson mixed, and alfalfa light grain mixed in Group II, in which the leafiness of the alfalfa is less than 40 per cent, which has 60 per cent or more green color, and which does not contain more than 10 per cent foreign material, shall have the word "green" included in and made a part of the grade designation, as: "U. S. No. 2 Green Alfalfa," "U. S. No. 3 Green Alfalfa."

*Grades for coarse hay.*—Hay of any numerical grade of any of the classes in Group II, in which the alfalfa stalks are hard and round, and more than 30 per cent of the alfalfa stalks have diameters equal to and greater than the diameter of No. 11 steel wire (approximately twelve one-hundredths of an inch) by steel wire gauge standards, shall have the word "coarse" included in and made a part of the grade designation, as: "U. S. No. 2 Coarse Alfalfa," "U. S. No. 2 Coarse Alfalfa Heavy Timothy Mixed."

## PRAIRIE HAY

(Group III)

### Definitions

For the purposes of the United States standards for prairie hay:

Hay shall be the cured herbage which meets the requirements of the various classes in Group III, which has recognized feeding value, which is not coarse and woody, and which does not contain more than 35 per cent of foreign material.

Upland grasses shall be bluestems (*Andropogon* spp.), grama grasses (*Bouteloua* spp.), *Paspalum* (*Paspalum* spp.), prairie June grass (*Koeleria cristata*), Indian grass (*Sorghastrum nutans*), and other grasses which grow commonly in upland virgin prairie meadows. Upland grasses may include not to exceed 10 per cent (of the total hay), singly or in combination, of midland grasses or other grasses. Upland grasses, however, shall not have a percentage allowance of midland grasses in the classes midland prairie and upland-midland prairie mixed because in these classes the percentage of midland grasses is specifically stated.

Midland grasses shall be slough grass (*Spartina michauxiana*), bluejoint (*Calamagrostis* spp.), sprangle top (*Fluminea festucacea*), and reed canary grass (*Phalaris arundinacea*).

Wheat grass shall be that grass most commonly called western wheat grass (*Agropyron smithii*) but occasionally known locally as bluestem, bluejoint, Colorado bluestem, alkali grass, salt grass, or western rye grass.

Other grasses shall be rushes, sedges, and cultivated grasses such as timothy, reedtop, and bluegrass.

Legumes shall be vetches, sweet clover, and other leguminous plants which occur in prairie meadows.

Foreign material shall be weeds, wire grasses (*Aristida* spp.), and such sedges, rushes, and other plants as are coarse and woody or otherwise not suitable for feeding purposes; also other objectionable matter which occurs naturally in hay.

Injurious foreign material shall be sand burs, poisonous plants, harsh bearded grasses, such as matured *Stipa* (*Stipa* spp.) with the needles attached, matured squirrel tail grass (*Hordeum jubatum*), and other matter which is injurious when fed to livestock.

*Green color.*—The term "per cent green" employed in these standards represents the amount of green color (green appearance) in field-cured hay computed as a percentage of the 100 per cent green color of hay produced so as to have received no discoloration from maturity, sun bleach, dew, rain, or other damage.

*Percentages.*—The standards for mixture percentages and foreign material are based upon percentages by weight of the total hay. The standard for coarse hay is based upon percentage by count of the grass plants. Measurements to determine diameters are made approximately 2 inches from the cut ends of the stalks. The standards for color are based upon color determinations ascertained by the method prescribed by the United States Department of Agriculture, which determinations are expressed in popular terms as "per cent green."

GROUP III.—*Prairie hay*

Class requirements		Grade requirements <sup>1</sup>		
Class	Mixture percentages	U. S. grade No.	Per cent green color	Maximum per cent foreign material
Upland prairie-----	{ Upland grasses with not over 10 per cent legumes-----	{ 1 2 3	{ 60 or more----- 35 or more----- Less than 35 <sup>2</sup> -----	{ 10 15 20
Wheat grass-----	{ Wheat grass with not over 20 per cent upland grasses and 10 per cent legumes-----	{ 1 2 3	{ 60 or more----- 35 or more----- Less than 35 <sup>2</sup> -----	{ 10 15 20
Midland prairie-----	{ Midland grasses or a mixture of midland grasses with upland and/or other grasses, with over 40 per cent midland grasses-----	{ 1 2	{ 60 or more----- 35 or more-----	{ 10 20
Upland-midland prairie mixed-----	{ A mixture of upland and midland grasses with over 10 per cent but not over 40 per cent midland grasses and not over 10 per cent legumes-----	{ 1 2 3	{ 60 or more----- 35 or more----- Less than 35 <sup>2</sup> -----	{ 10 15 20
All classes-----		Sample grade.	Hay of the above classes which does not meet the requirements of the numerical grades or which contains more than a trace of injurious foreign material, or which has any objectionable odor, or which is heating, hot, wet, moldy, musty, caked, badly stained, badly weathered, badly over-ripe, or otherwise of distinctly low quality.	

<sup>1</sup> Hay that is stained shall not be graded higher than No. 3.

<sup>2</sup> Does not apply to hay graded No. 3 account of foreign material.

## Special Grades to Supplement Numerical Grades in Group III

*Grades for extra green hay.*—Hay of the grades 1 and 2 of any of the classes in Group III which has 75 per cent or more green color shall have the words "extra green" included in and made a part of the grade designation, as: "U. S. No. 1 Extra Green Upland Prairie."

*Grades for coarse hay.*—Hay of any numerical grade of any of the classes in Group III in which more than 30 per cent of the grass stalks have diameters equal to and greater than the diameter of No. 11 steel wire (approximately twelve one-hundredths of an inch) by steel wire gauge standards, shall have the word "coarse" included in and made a part of the grade designation, as: "U. S. No. 2 Coarse Upland Prairie."

## JOHNSON AND JOHNSON MIXED HAY

(Group IV)

## Definitions

For the purposes of the United States standards for Johnson and Johnson mixed hay:

Hay shall be the cured, unthreshed herbage which meets the requirements of the various classes in Group IV, which has recognized feeding value, which is not coarse and woody, and which does not contain more than 35 per cent of foreign material.

Johnson grass may include not to exceed 10 per cent (of the total hay) of other grasses and 10 per cent (of the total hay) of early cut cane hay. Johnson grass, however, shall not have a percentage allowance of other grasses in the classes Johnson light grass mixed and Johnson heavy grass mixed, because in these classes the percentage of other grasses is specifically stated.

Grasses shall be *Paspalum*, Bermuda grass, crab grass, early cut broom sedge, early cut pigeon grass (sometimes called foxtail or wild millet), and such other cultivated and wild grasses, sedges, and rushes as occur in Johnson grass meadows,



and may include not to exceed 10 per cent (of the total hay) of early cut grain hay.

Legumes shall be alfalfa, Lespedeza, yellow trefoil (black medic), vetches, clover, and other leguminous plants.

Alfalfa may include not to exceed 10 per cent (of the total hay) of other legumes.

Lespedeza may include not to exceed 10 per cent (of the total hay) of other legumes.

Foreign material shall be weeds, wire grasses (*Aristida* spp.), matured broom sedge, matured pigeon grass (sometimes called foxtail or wild millet), and such sedges, rushes, and other plants as are coarse and woody or otherwise not suitable for feeding purposes; also cornstalks, grain straw, stubble, chaff, and other objectionable matter which occurs naturally in hay.

Injurious foreign material shall be sand burs, poisonous plants, harsh-bearded grasses such as matured squirrel tail grass (*Hordeum jubatum*), matured wild barley (*H. murinum*), and matured little barley (*H. pusillum*), and other matter which is injurious when fed to livestock.

*Green color.*—The term "per cent green" employed in these standards represents the amount of green color (green appearance) in field-cured hay computed as a percentage of the 100 per cent green color of hay produced so as to have received no discoloration from maturity, sun bleach, dew, rain, or other damage.

*Percentages.*—The standards for mixture percentages and foreign material are based upon percentages by weight of the total hay. The standards for fine and coarse hay are based upon percentages by count of the Johnson grass plants. Measurements to determine diameters are made approximately 2 inches from the cut ends of the stalks. The standards for color are based upon color determinations ascertained by the method prescribed by the United States Department of Agriculture, which determinations are expressed in popular terms as "per cent green."

#### GROUP IV.—Johnson and Johnson mixed hay

Class requirements		Grade requirements <sup>1</sup>		
Class	Mixture percentages	U. S. grade No.	Per cent green color	Maximum per cent foreign material
Johnson.....	{ Johnson grass with not over 10 per cent legumes.	{ 1 2 3	{ 45 or more..... 25 or more..... Less than 25 <sup>2</sup> .....	{ 10 15 20
Johnson light grass mixed.....	{ A mixture of Johnson grass and other grasses with over 10 per cent but not over 30 per cent other grasses and not over 10 per cent legumes.	{ 1 2 3	{ 45 or more..... 25 or more..... Less than 25 <sup>2</sup> .....	{ 10 15 20
Johnson heavy grass mixed.....	{ A mixture of Johnson grass and other grasses with over 30 per cent but not over 60 per cent other grasses and not over 10 per cent legumes.	{ 1 2 3	{ 45 or more..... 25 or more..... Less than 25 <sup>2</sup> .....	{ 10 15 20
Johnson light alfalfa mixed.....	{ A mixture of Johnson grass and alfalfa with over 10 per cent but not over 30 per cent alfalfa.	{ 1 2 3	{ 45 or more..... 25 or more..... Less than 25 <sup>2</sup> .....	{ 10 15 20
Johnson light Lespedeza mixed.	{ A mixture of Johnson grass and Lespedeza with over 10 per cent but not over 30 per cent Lespedeza.	{ 1 2 3	{ 45 or more..... 25 or more..... Less than 25 <sup>2</sup> .....	{ 10 15 20
All classes.....		Sample grade.	Hay of the above classes which contains more than 20 per cent foreign material, or which contains more than a trace of injurious foreign material, or which has any objectionable odor, or which is heating, hot, wet, moldy, musty, caked, badly stained, badly weathered, badly overripe, or otherwise of distinctly low quality.	

<sup>1</sup> Hay that is stained shall not be graded higher than No. 3.

<sup>2</sup> Does not apply to hay that is graded No. 3 on account of foreign material.



## Special Grades to Supplement Numerical Grades in Group IV

*Grades for extra green hay.*—Hay of the grades 1 and 2 of any of the classes in Group IV which has 60 per cent or more green color shall have the words "extra green" included in and made a part of the grade designation, as "U. S. No. 1 Extra Green Johnson," "U. S. No. 1 Extra Green Johnson Light Grass Mixed."

*Grades for fine Johnson hay.*—Hay of any numerical grade of the class Johnson in Group IV, which has no matured Johnson grass seed heads, and which has 70 per cent or more of the Johnson grass stalks with diameters equal to and smaller than the diameter of No. 13 steel wire (approximately nine one-hundredths of an inch), and no stalks having diameters equal to, or greater than, the diameter of No. 10 steel wire (approximately thirteen one-hundredths of an inch) by steel wire gauge standards, shall have the word "Fine" included in and made a part of the grade designation, as "U. S. No. 1 Fine Johnson," "U. S. No. 2 Fine Johnson," "U. S. No. 3 Fine Johnson."

*Grades for coarse hay.*—Hay of any numerical grade of any of the classes in Group IV, in which more than 30 per cent of the Johnson grass stalks have (a) diameters equal to and greater than the diameter of No. 9 steel wire (approximately fifteen one-hundredths of an inch) by steel wire gauge standards, (b) matured seed heads, or (c) any combination of (a) and (b), shall have the word "Coarse" included in and made a part of the grade designation, as: "U. S. No. 2 Coarse Johnson," "U. S. No. 2 Coarse Johnson Heavy Grass Mixed."

## GRASS HAY

(Group V)

### Definitions

For the purposes of the United States standards for grass hay:

Hay shall be the cured, unthreshed herbage which meets the requirements of Group V, which has recognized feeding value, which is not coarse and woody, and which does not contain more than 35 per cent of foreign material.

The group grass hay shall include hay which contains, either singly or in combination, more than 60 per cent of (a) grasses other than timothy, Johnson grass, upland and midland prairie grasses, or grain cut for hay, and (b) sedges and rushes.

Foreign material shall be weeds, matured pigeon grass (sometimes called foxtail or wild millet), wire grasses (*Aristida* spp.), matured wild brome grasses such as cheat, matured broom sedge, and such sedges, rushes, and other plants as are coarse and woody or otherwise not suitable for feeding purposes; also other objectionable matter which occurs naturally in hay.

Injurious foreign material shall be sand burs, poisonous plants, harsh-bearded grasses such as matured squirrel tail grass (*Hordeum jubatum*), matured wild barley (*H. murinum*), matured little barley (*H. pusillum*), and matured *Stipa* (*Stipa* spp.) with needles attached, or other matter which is injurious when fed to livestock.

*Green color.*—The term "per cent green" employed in these standards represents the amount of green color (green appearance) in field-cured hay computed as a percentage of the 100 per cent green color of hay produced so as to have received no discoloration from maturity, sun bleach, dew, rain, or other damage.

*Percentages.*—The standards for mixture percentages and foreign material are based upon percentages by weight of the total hay. The standard for coarse hay is based upon percentage by count of the grass plants. Measurements to determine diameters are made approximately 2 inches from the cut ends of the stalks. The standards for color are based upon color determinations ascertained by the method prescribed by the United States Department of Agriculture, which determinations are expressed in popular terms as "per cent green."

GROUP V.—*Grass hay* <sup>1</sup>

U. S. grade No.	Grade requirements <sup>2</sup>	
	Per cent green color	Maximum per cent foreign material
1-----	60 or more <sup>3</sup> -----	10
2-----	35 or more-----	15
3-----	Less than 35-----	20
Sample grade-----	Hay which contains more than 20 per cent foreign material, or which contains more than a trace of injurious foreign material, or which has any objectionable odor, or which is heating, hot, wet, moldy, musty, caked, badly stained, badly weathered, badly overripe, or otherwise of distinctly low quality	

<sup>1</sup> Grade designations for grass hay shall include, after the words "Grass hay," either the common names of the various kinds of grasses, legumes, sedges, and/or rushes which constitute more than 10 per cent of the mixture written in the order of importance, or such local trade names as will identify the kind or kinds of grasses, sedges, and/or rushes.

<sup>2</sup> Hay that is stained shall not be graded higher than No. 3.

<sup>3</sup> Does not apply to hay graded No. 3 on account of foreign materials.

## Special Grades to Supplement Numerical Grades in Group V

*Grades for extra green hay.*—Grass hay of the grades 1 and 2 which has 75 per cent or more green color shall have the words "extra green" included in and made a part of the grade designation, as "U. S. No. 1 Extra Green Grass Hay, Colorado South Park," "U. S. No. 2 Extra Green Grass Hay, Redtop and Bluegrass (account foreign material)."

*Grades for coarse hay.*—Grass hay of any numerical grade in which more than 30 per cent of the grass stalks have diameters equal to and greater than the diameter of No. 11 steel wire (approximately twelve one-hundredths of an inch) by steel wire gauge standards, shall have the word "Coarse" included in and made a part of the grade designation, as "U. S. No. 2 Coarse Grass Hay, Orchard Grass."

## MIXED HAY

(Group VI)

For the purpose of the United States standards for mixed hay:

Hay shall be the cured, unthreshed herbage which meets the requirements of Group VI, which has recognized feeding value, which is not coarse and woody, and which does not contain more than 35 per cent of foreign material.

The group mixed hay shall include hay not classified under the United States standards for timothy and clover hay, alfalfa and alfalfa mixed hay, prairie hay, Johnson and Johnson mixed hay, or grass hay, and which contains, either singly or in combination, 50 per cent or more of timothy, clover, alfalfa, upland and midland prairie grasses, Johnson grass, or other grasses as defined in the United States standards for hay.

*Grades for mixed hay.*—Mixed hay shall be graded according to the color and foreign material requirements for the kind of hay which predominates in the mixture. The grade designation for mixed hay shall include successively, in the order named, (1) the letters "U. S.," (2) the number of the grade or the words "Sample grade," as the case may be, (3) the words "Mixed Hay," and (4) the approximate percentage of each kind of hay which constitutes more than 10 per cent of the mixture written in the order of importance.

